

Title: Design Coordination

Type: Template Map

Description: A process in which clash detection software is used to identify and resolve geometric conflicts by comparing 3D models of building systems.

Processes: (Refer Attachment 1: Template Process Map for Design Coordination)

Create model sharing system: The project team must identify and create a location to store shared model files which may include a project website, ftp site, or a collaboration management system.

Define coordination meeting location requirements: The project team must define the requirements for the location of the coordination meetings. The team should consider multiple displays, interactive whiteboards, and the ability to quickly revise models if required.

Define information for discipline models: The information requirements on a project must be decided by the project team's input and by the specific purpose for which these details will be used. The information exchange requirements document should be developed in this process.

Define the areas for coordination: The project team must define the areas/zones or the disciplines which needs to be incorporated into the collision detection process.

Develop a schedule for coordination: The project team must develop a schedule for coordination. The schedule is the work plan to ensure that model coordination is complete with adequate time for fabrication and installation.

Establish a protocol to address collisions: The project team should define the protocol which will be used to resolve collisions.

Create discipline models: Each discipline must create their respective information model in compliance with the defined level of detail.

Compile composite model: The 3D coordinator must integrate discipline specific models for the collision detection.

Perform collision detection: The 3D coordinator must perform the collision detection and distribute the results to project team members.

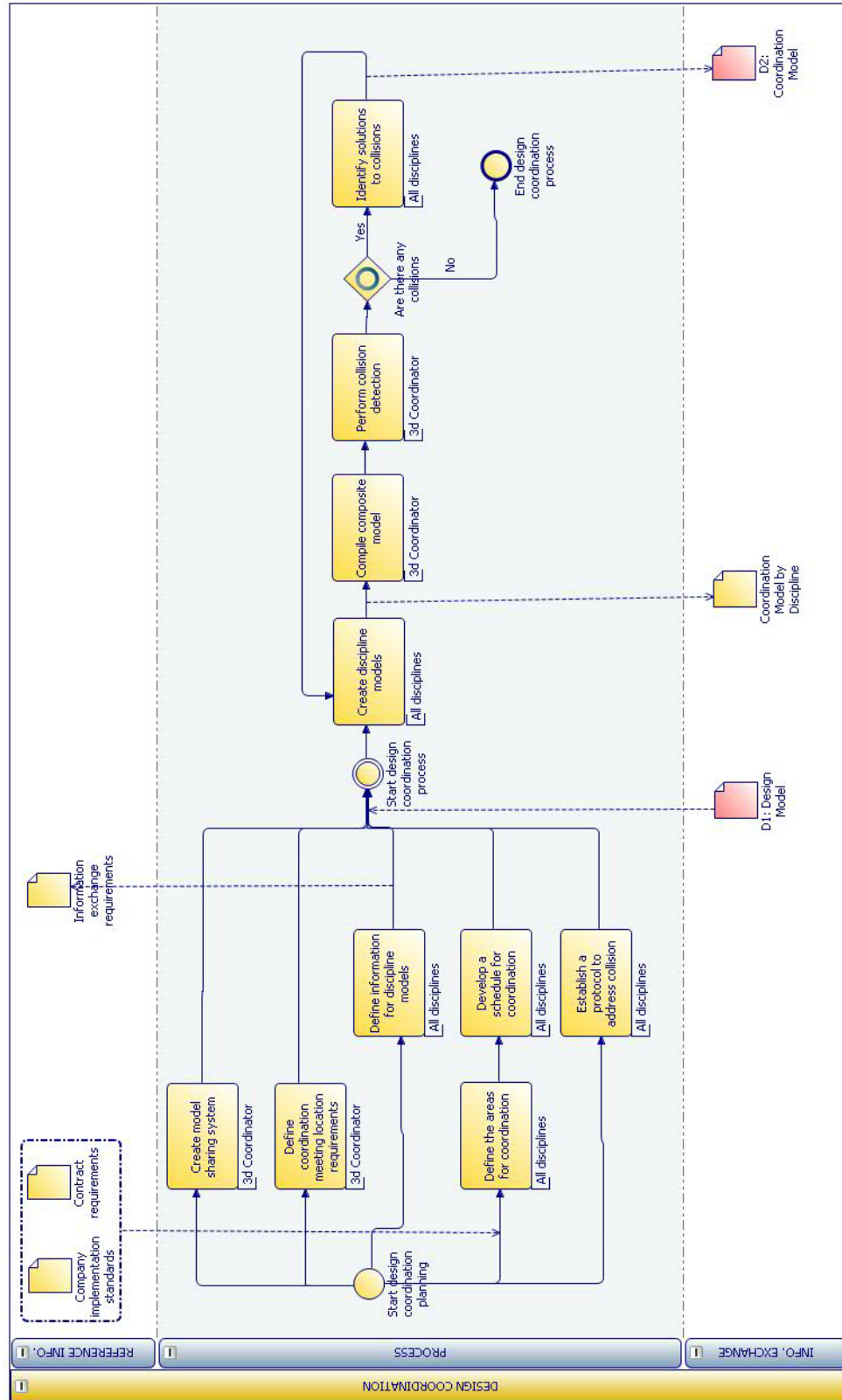
Identify solutions to collisions: The project team must define solutions to the identified conflicts which are acceptable to the team. These solutions must be documented so that the appropriate discipline can revise their model.

Information Exchange Requirements:

D1 - Design Model: The model developed by the architect and the engineers to show the location and composition of the building elements. (Refer Attachment 2: Information Exchange Requirements)

D2 – Coordination Model: The model developed by the architect, engineers, contractor and the trade contractors which show precise geometric location for elements in the building. (Refer Attachment 2: Information Exchange Requirements)

Attachment 1: Template Process Map for Design Coordination



Attachment 2: Information Exchange Requirements

Information Exchange Requirements				D1: Design Model			D2: Coordination Model		
Template Map: Design Coordination									
Model Elements Using CSI UniFormat				Information	Grouping	Responsible Party	Information	Grouping	Responsible Party
A	Substructure	A10 Foundations	A1010 Standard Foundations	A	Building Level	A/E	B	Element	A/E
			A1020 Special Foundations	A	Building Level	A/E	B	Element	TC
			A1030 Slab on Grade	A	Building Level	A/E	B	Element	A/E
	A20	Basement Construction	A2010 Basement Excavation	A	Building Level	A/E	B	Element	A/E
			A2020 Basement Walls	B	Building Level	A/E	B	Element	A/E
B	Shell	B10 Superstructure	B1010 Floor Construction				B	Element	TC
			B1020 Roof Construction				B	Element	TC
	B20	Exterior Enclosure	B2010 Exterior Walls	B	Building Level	A	B	Element	A
			B2020 Exterior Windows	B	Building Level	A	B	Element	A
			B2030 Exterior Doors	B	Building Level	A	B	Element	A
	B30	Roofing	B3010 Roof Coverings	B	Building Level	A/E	B	Element	A/E
			B3020 Roof Openings	B	Building Level	A/E	B	Element	A/E
C	Interiors	C10 Interior Construction	C1010 Partitions	B	Building Level	A	B	Element	A
			C1020 Interior Doors	B,E	Building Level	A	B	Element	A
			C1030 Fittings	B,E	Building Level	A/E	B	Element	C
	C20	Stairs	C2010 Stair Construction	B,E	Building Level	A/E	B	Element	TC
			C2020 Stair Finishes	E	Building Level	A	A	Element	A
	C30	Interior Finishes	C3010 Wall Finishes	E	Building Level	A	A	Element	A
			C3020 Floor Finishes	E	Building Level	A	A	Element	A
			C3030 Ceiling Finishes	E	Building Level	A	A	Element	A
D	Services	D10 Conveying	D1010 Elevators & Lifts	B,E	Building Level	A/E	B	Element	
			Escalators & Moving Walks						
			D1020 Walks	B,E	Building Level	A/E	B	Element	
	D20	Plumbing	Other Conveying Systems						
			D1030 Systems	B,E	Building Level	A/E	B	Element	
			D2010 Plumbing Fixtures	A,E	Building Level	A/E	B	Element	TC
			Domestic Water Distribution						
			D2020 Distribution	A	Building Level	A/E	B	Element	TC
			D2030 Sanitary Waste	A	Building Level	A/E	B	Element	TC
			D2040 Rain Water Drainage	A	Building Level	A/E	B	Element	TC
	D30	HVAC	D2090 Other Plumbing Systems	A,E	Building Level	A/E	B	Element	TC
			D3010 Energy Supply	A	Building Level	A/E	B	Element	TC
			Heat Generating Systems						
			D3020 Systems	A	Building Level	A/E	B	Element	TC
			Cooling Generating Systems						
			D3030 Systems	A	Building Level	A/E	B	Element	TC
			D3040 Distribution Systems	A	Building Level	A/E	B	Element	TC
			Terminal & Package Units						
			D3050 Units	A	Building Level	A/E	B	Element	TC

Information Exchange Requirements Template Map: Design Coordination					D1: Design Model			D2: Coordination Model		
Model Elements Using CSI UniFormat					Information	Grouping	Responsible Party	Information	Grouping	Responsible Party
	D40	Fire Protection		Controls & Instrumentation	A	Building Level	A/E	B	Element	TC
				D3060 Systems Testing & Balancing			A/E	B	Element	TC
				D3070 Other HVAC Systems & Equipment	A,E	Building Level	A/E	B	Element	TC
				D4010 Sprinklers	A	Building Level	A/E	B	Element	TC
				D4020 Standpipes	A	Building Level	A/E	B	Element	TC
				D4030 Fire Protection Specialties				B	Element	TC
	D50	Electrical		D4090 Other Fire Protection Systems	A,E	Building Level	A/E	B	Element	TC
				D5010 Electrical Services & Distribution	A	Building Level	A/E	B	Element	TC
				D5020 Lighting and Branch Wiring	A	Building Level	A/E	B	Element	TC
				D5030 Communications & Security	A	Building Level	A/E	B	Element	TC
				D5090 Other Electrical Systems	A	Building Level	A/E	B	Element	TC
E	Equipment & Furnishings	E10	Equipment	E1010 Commercial Equipment						
				E1020 Institutional Equipment						
				E1030 Vehicular Equipment						
				E1090 Other Equipment						
		E20	Furnishings	E2010 Fixed Furnishings	A	Building Level				
				E2020 Movable Furnishings						
F	Special Constr. & Demo	F10	Special Construction	F1010 Special Structures						
				F1020 Integrated Construction						
				F1030 Special Construction Systems						
				F1040 Special Facilities						
		F20	Selective Bldg Demo	F1050 Special Controls & Instrumentation						
				F2010 Building Elements Demolition	A			A		
				F2020 Hazardous Abatement						
G	Building Sitework	G10	Site Preparation	G1010 Site Clearing						
				G1020 Site Demolition & Relocations						
				G1030 Site Earthwork						
				G1040 Hazardous Waste Remediation						
		G20	Site	G2010 Roadways						

Information Exchange Requirements Template Map: Design Coordination				D1: Design Model			D2: Coordination Model		
Model Elements Using CSI UniFormat				Information	Grouping	Responsible Party	Information	Grouping	Responsible Party
G30	Improvements	G2020	Parking Lots						
		G2030	Pedestrian Paving						
		G2040	Site Development						
		G2050	Landscaping						
	Site Civil/ Mech. Utilities		Water Supply &						
		G3010	Distribution Systems	A		A/E	B		C
		G3020	Sanitary Sewer Systems	A		A/E	B		C
		G3030	Storm Sewer Systems	A		A/E	B		C
		G3040	Heating Distribution				B		C
		G3050	Cooling Distribution				B		C
		G3060	Fuel Distribution				B		C
			Other Civil/ Mechanical						
		G3090	Utilities	A		A/E	B		C
	Site Electrical Utilities	G4010	Electrical Distribution	A			B		C
		G4020	Site Lighting						
			Site Communications &						
		G4030	Security						
		G4090	Other Electrical Utilities	A			B		C
G50	Other Site Construction	G5010	Service Tunnels						
			Other Site Systems &						
		G5090	Equipment						

Legend			
Information:		Responsible Party	
A	Geometry, approximate location	A	Architect
B	Geometry, precise location	E	Engineer
C	Cost	C	General contractor/ Construction Manager
D	Schedule	TC	Trade Contractors
E	Element property information	O	Owner